Theme 7: Organization, Priorities and Accomplishments

NOAA

NOAA FISHERIES

Southeast Fisheries Science Center

Does the Center work effectively internally and in coordination with the councils, HMS, and ICCAT to accomplish needed assessments according to a set of priorities?

Clay E. Porch

Director, Sustainable Fisheries Division

Southeast Fisheries Science Center

July 2014

Outline

Organization and staffing
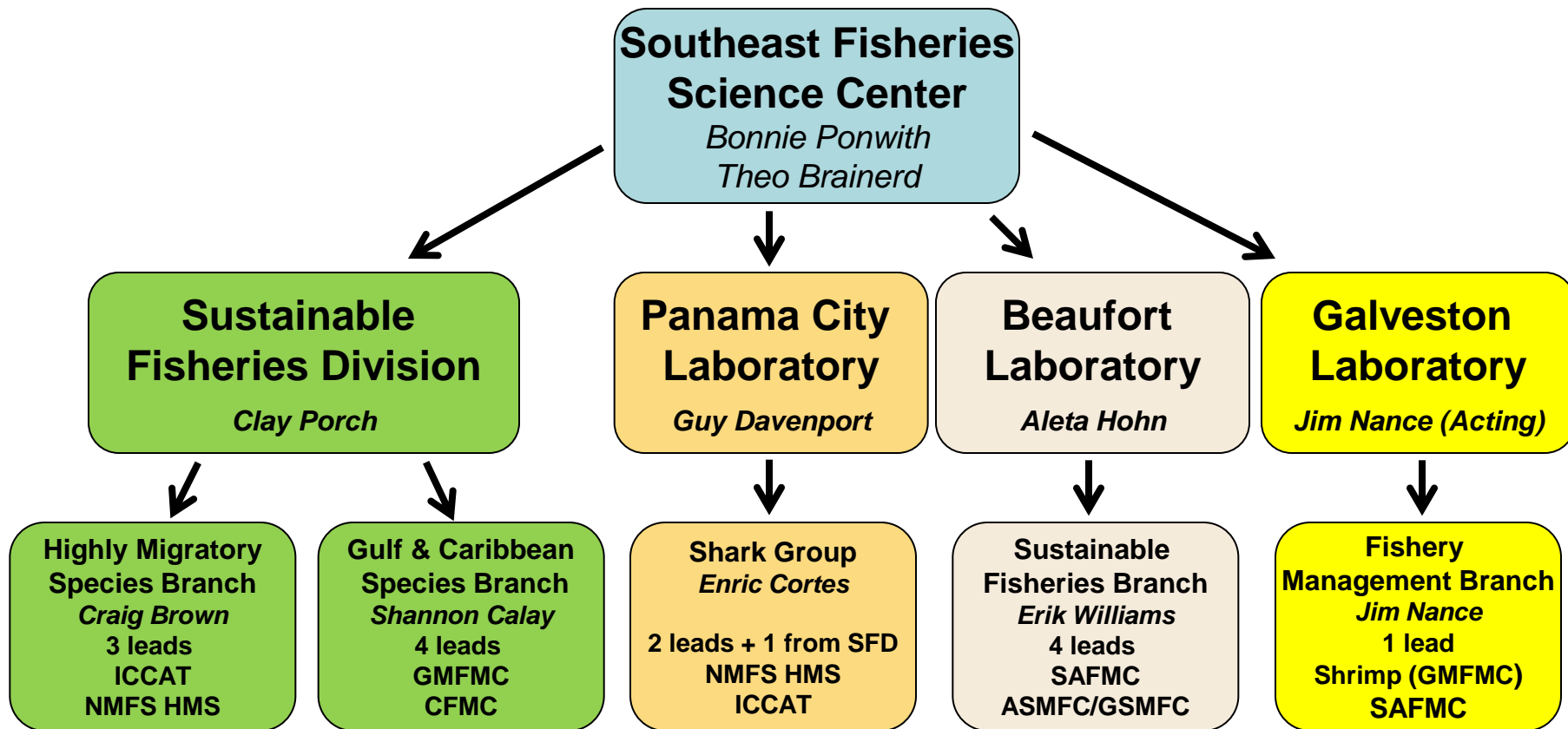
Accomplishments

Challenges and potential solutions

- Prioritizing assessments
- Tackling bottlenecks
- Improving data
- Investing in people

Organization and staffing

SEFSC assessment groups (2014)

```
┌─────────────────────────┐
│ Southeast Fisheries     │
│ Science Center          │
│ Bonnie Ponwith          │
│ Theo Brainerd           │
└─────────────────────────┘
```

Sustainable Fisheries Division
Clay Porch

Panama City Laboratory
Guy Davenport

Beaufort Laboratory
Aleta Hohn

Galveston Laboratory
Jim Nance (Acting)

Highly Migratory Species Branch
Craig Brown
3 leads
ICCAT
NMFS HMS

Gulf & Caribbean Species Branch
Shannon Calay
4 leads
GMFMC
CFMC

Shark Group
Enric Cortes

2 leads + 1 from SFD
NMFS HMS
ICCAT

Sustainable Fisheries Branch
Erik Williams
4 leads
SAFMC
ASMFC/GSMFC

Fishery Management Branch
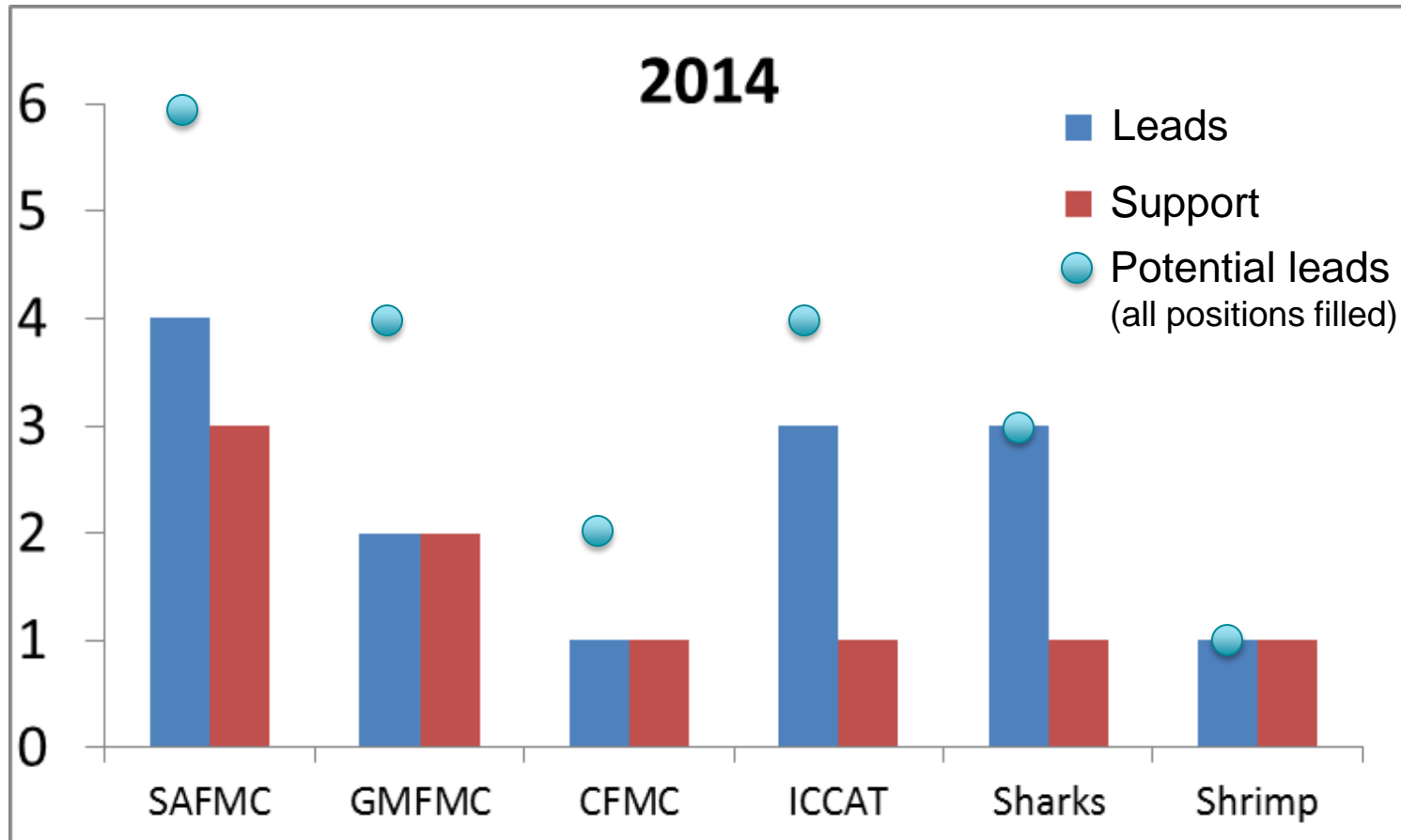*Jim Nance*
1 lead
Shrimp (GMFMC)
SAFMC

Number of "leads" in each box refers to the number of scientists with the potential to take the lead on an assessment. Entries on the last row indicate the primary council or RFMO being served.
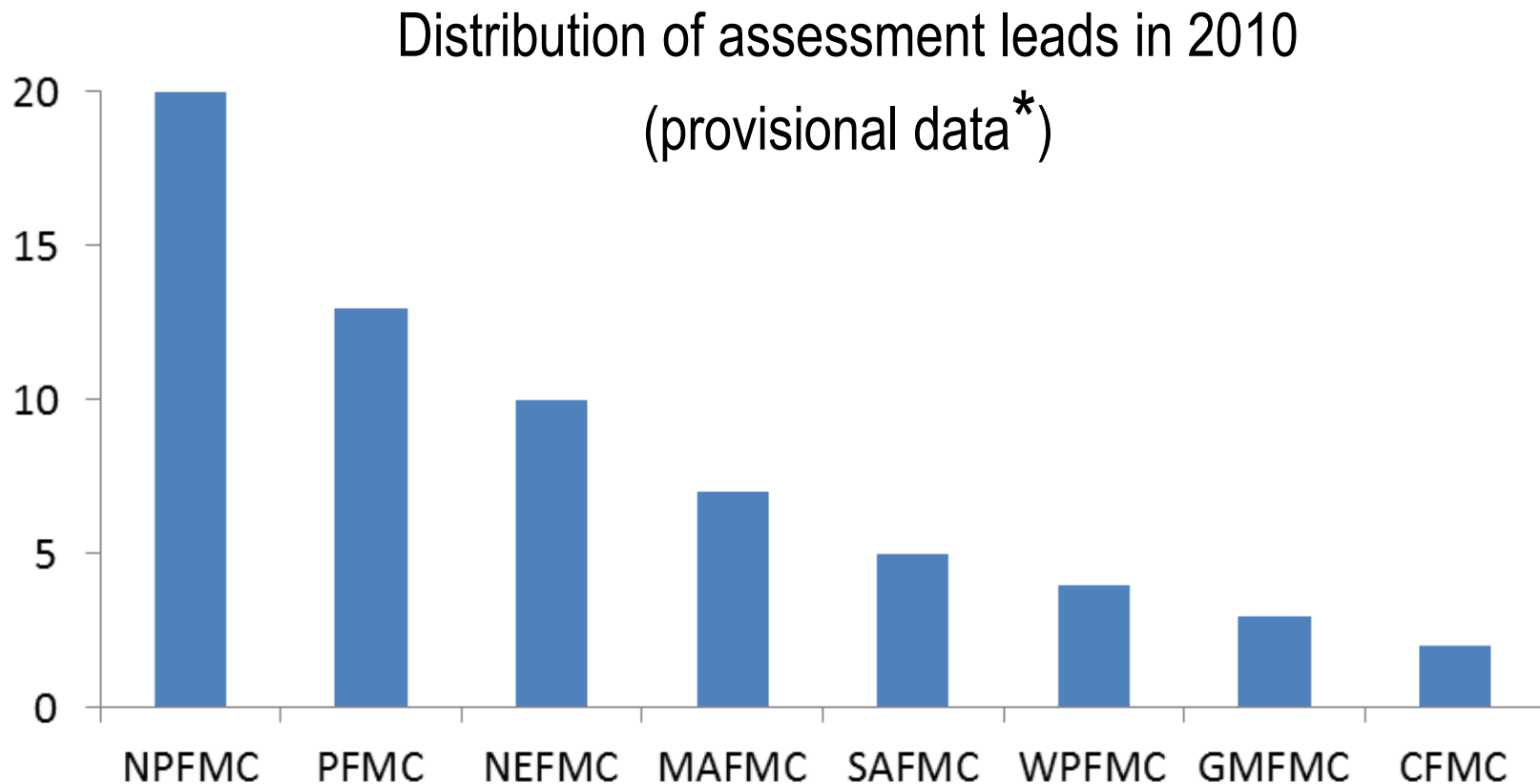
Assessment leads: past and future
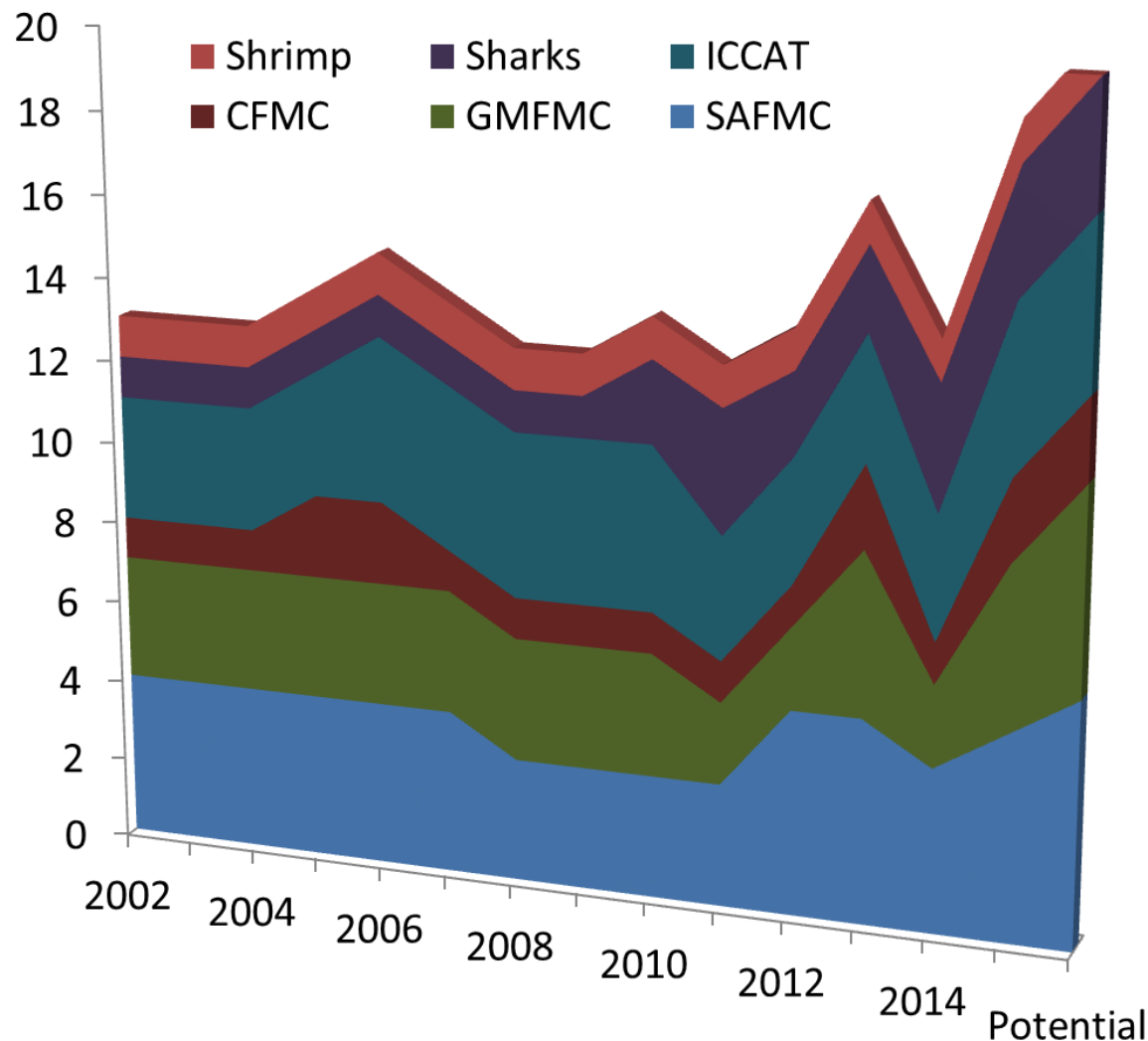
Assessment leads by FMO in 2014

National view: Assessment leads by Council

Distribution of assessment leads in 2010

(provisional data*)

* Distribution between MAFMC and NEFMC is approximate and has not been reviewed by the NEFSC
Actual number of leads may vary by one or two depending on how lead is classified, but trend is robust
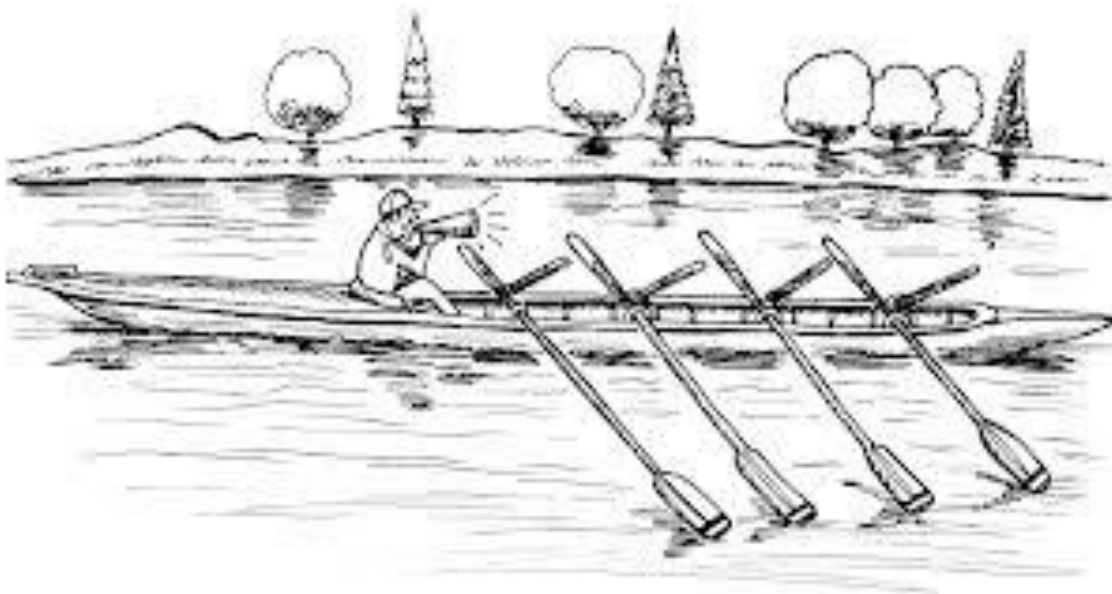
Demographics of lead assessment scientists
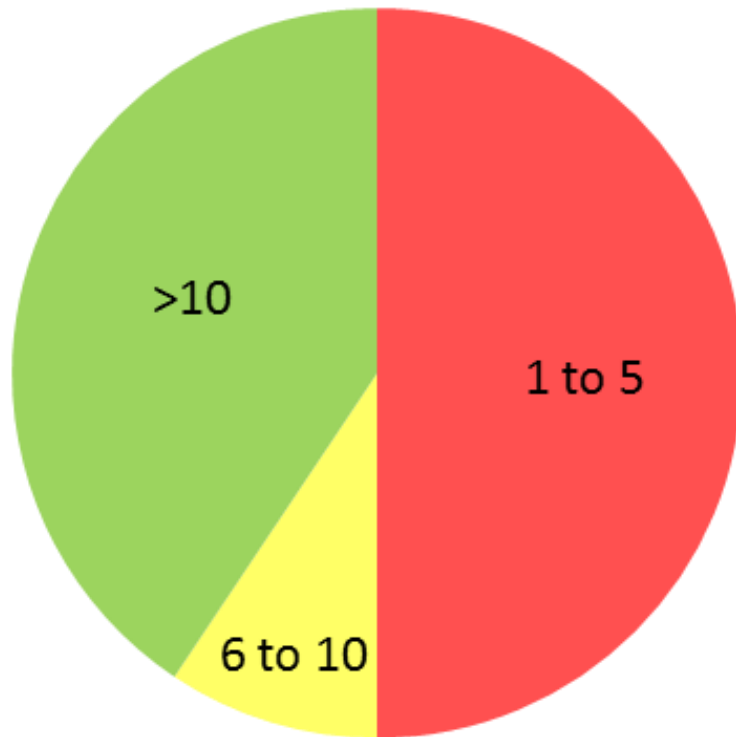
- 6 new positions since 2009 (enhanced stock assessment initiative)

- Turnover of staff

Years in service: time from start of SEFSC employment to retirement or other change in position
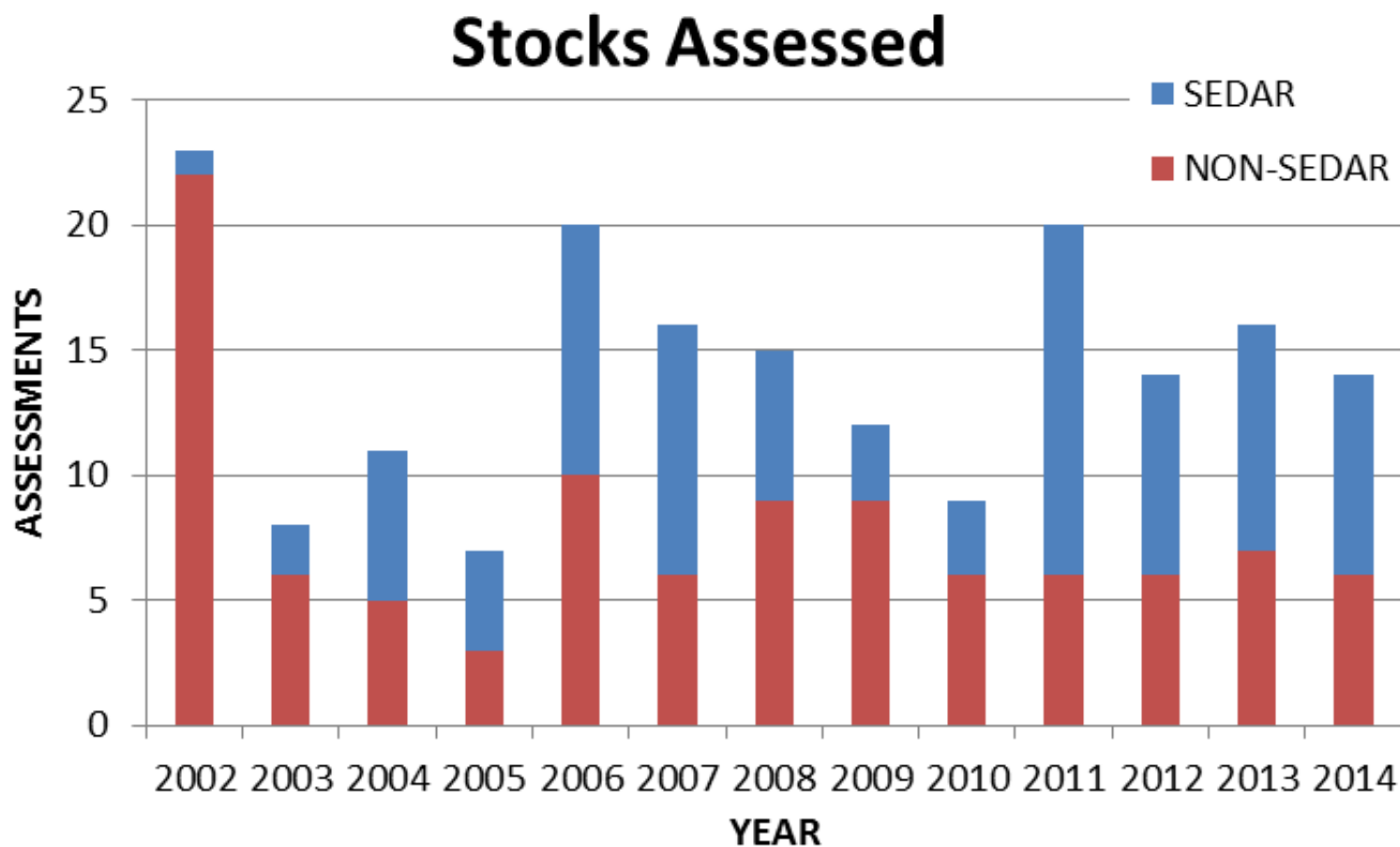
Take home message

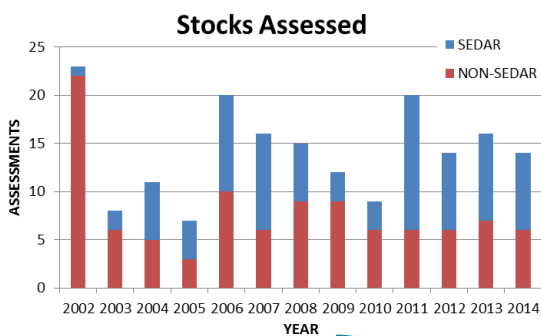- High turnover of staff

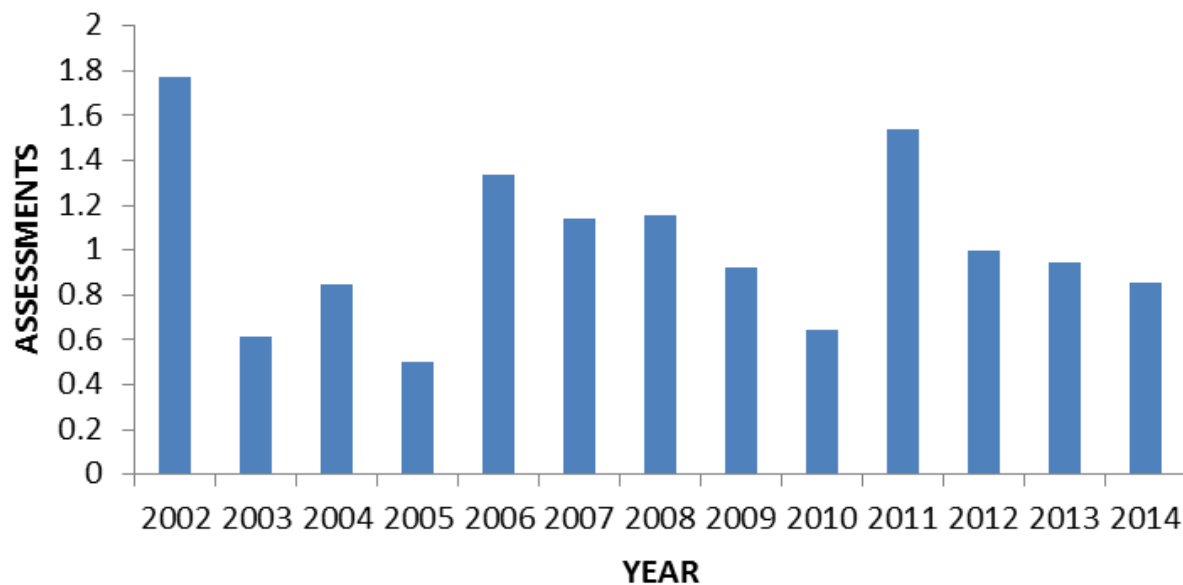- Spread thin over 5+ jurisdictions
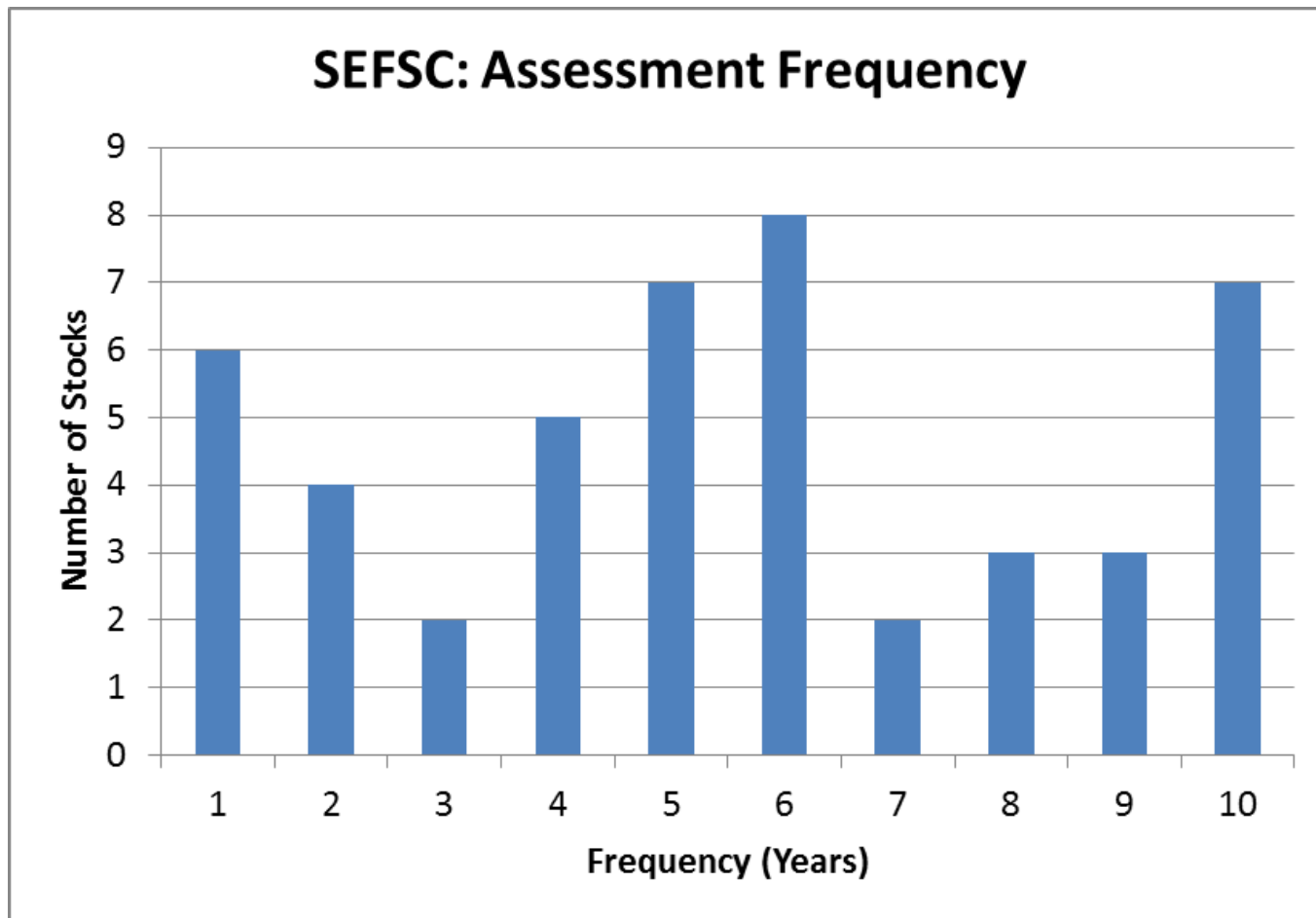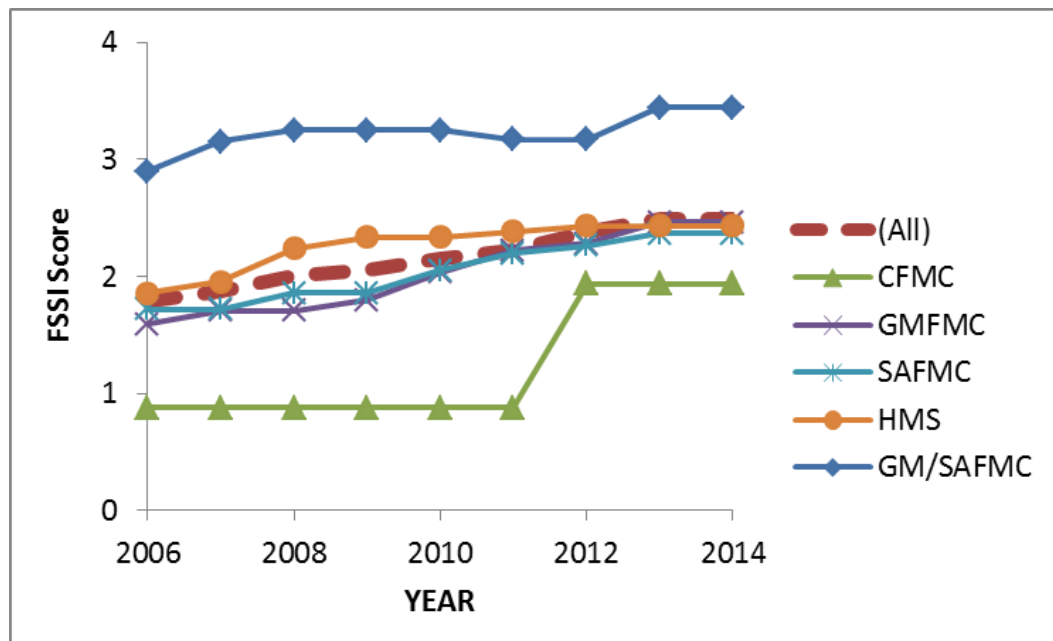
Accomplishments

Throughput

Throughput

Stocks Assessed

Stocks Assessed per lead

Throughput

Improving stock status

FSSI scoring

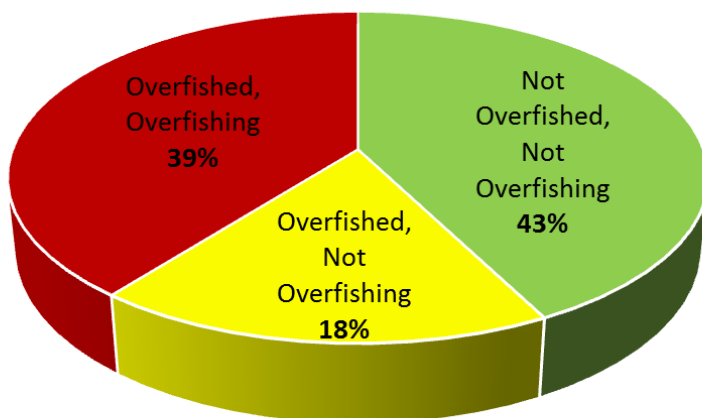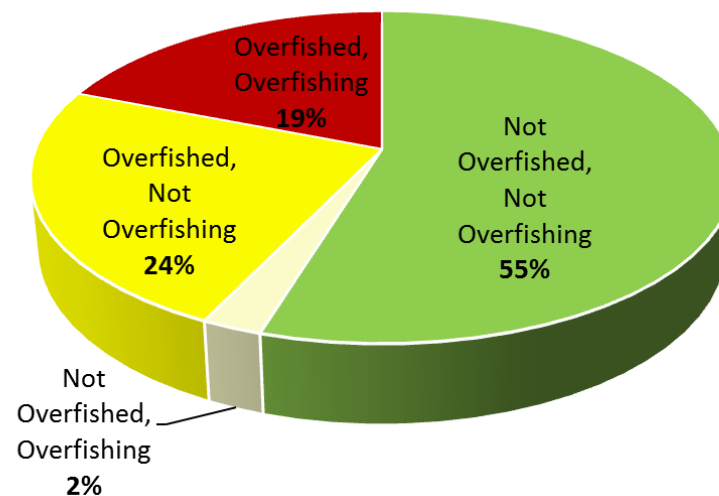|	
"Overfished" status is known	0.5
"Overfishing" status is known	0.5
No Overfishing	1
Not overfished	1
> 80% of B_{MSY} MSY	1

Improving stock status
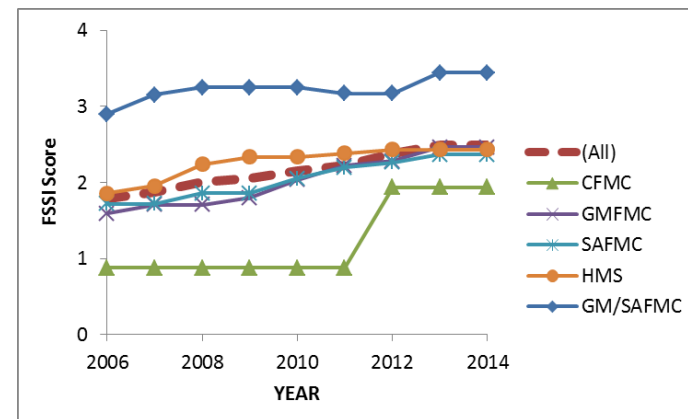

Stock Status 2008
(n = 33)

Stock Status Q1-2014
(n = 42)

Challenges… and potential solutions

Prioritizing assessments, tackling bottlenecks, improving data, and investing in people

"You bring up an important concern, but I'm looking for a problem that better fits my preconceived solution."

The overarching goal (under MSRA)

Provide scientific advice on the level of catch that will prevent overfishing, rebuild overfished stocks and achieve the optimum yield
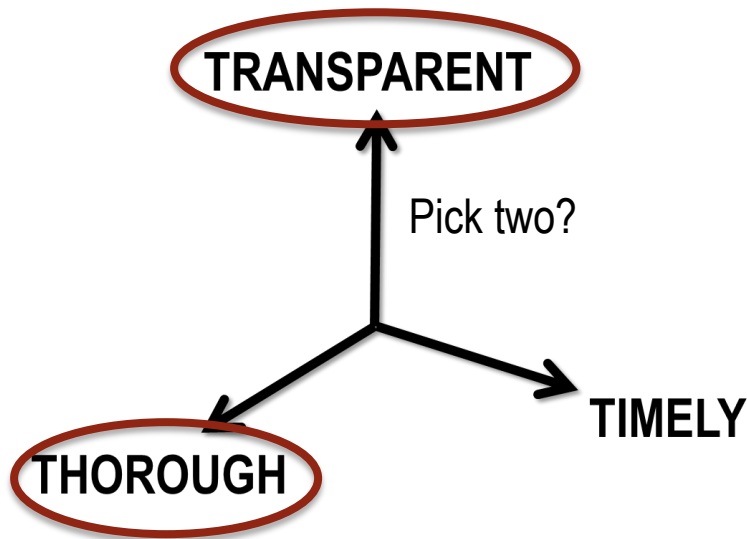
Life Cycle costs of an assessment

TRANSPARENT

Pick two?

THOROUGH

TIMELY

Total staff	SEFSC staff	Event
30	20	June 2012 initial data call/prep
40	20	August 2012 DW
25	10	January 2013 AW
15	5	April 2013 RW
2	1(+under study)	Summer/Fall 2013 Present to SSC
1	1(+under study)	Fall 2013 Present to council
1	1(+under study)	2014 IPT, 2015 projection advice

The overarching goal (under MSRA)

Provide scientific advice on the level of catch that will prevent overfishing, rebuild overfished stocks and achieve the optimum yield
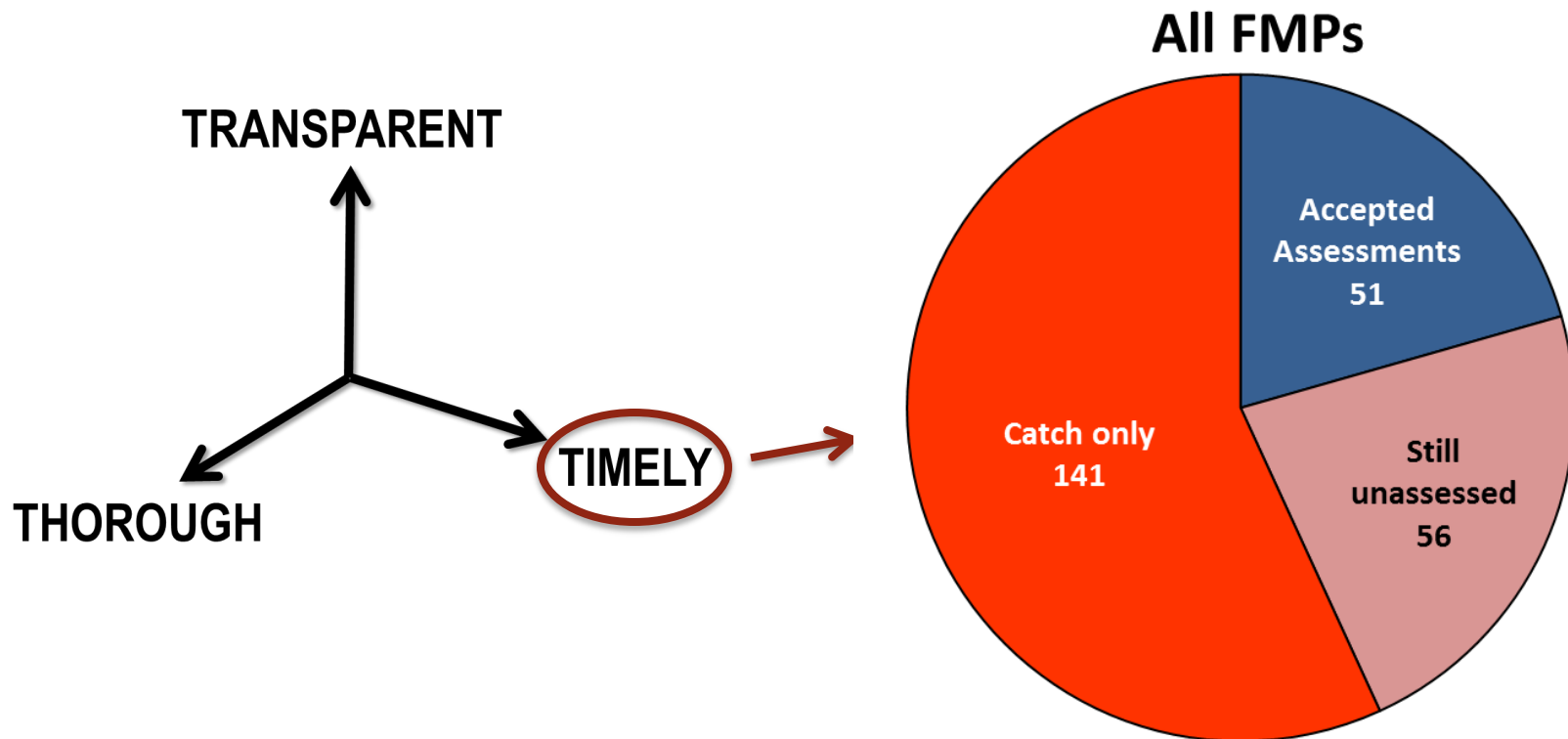

TRANSPARENT

THOROUGH

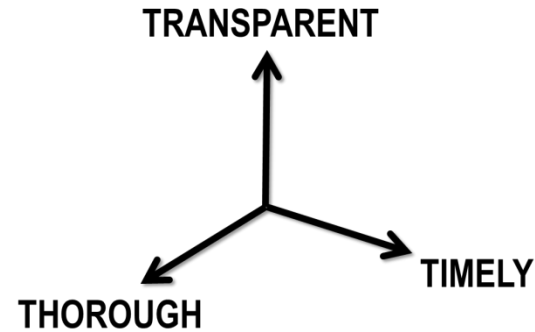**TIMELY**

All FMPs

- Accepted Assessments 51
- Still unassessed 56
- Catch only 141

Balancing the three T's

All FMPs

Potential assessment leads: 20 people

Stocks that can be assessed: 107

Assessment rate in current processes: 1 pyr^{-1}

Balancing the three T's

TRANSPARENT

THOROUGH   TIMELY

All FMPs

Accepted Assessments 51

Still unassessed 56

Catch only 141

Potential assessment leads: 20 people

Stocks that can be assessed:

Assessment rate in current practices: 1 pyr^{-1}

Average assessment frequency:

107 / 20 p / 1 pyr once every 5.3 years

Assessment rate to achieve biennial assessments:

(10   yr^{-1}) / 20 p = 2.7 assessments per person each year

Not sustainable in the current system!

NOAA FISHERIES

Balancing the three T's

TRANSPARENT

THOROUGH
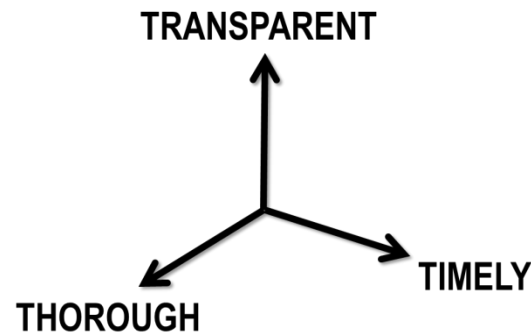
TIMELY

All FMPs
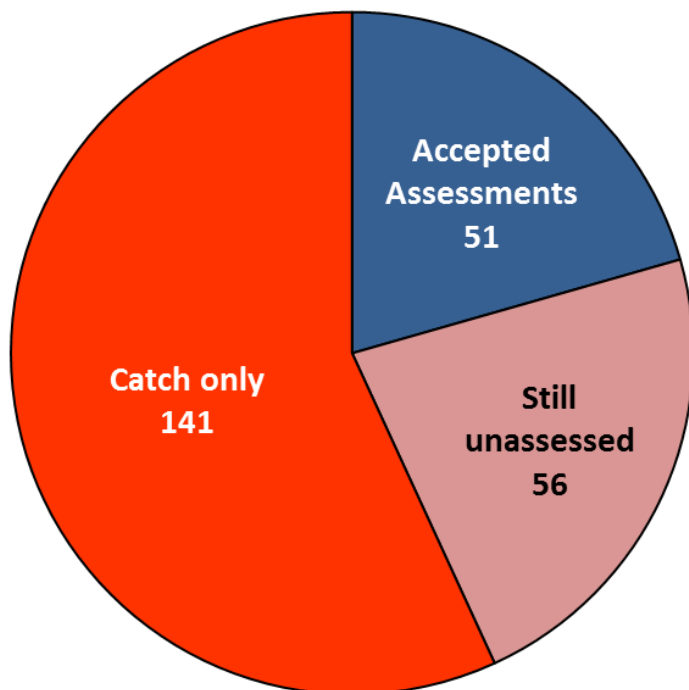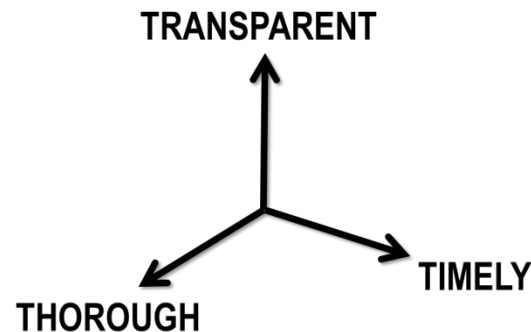

Accepted Assessments 51

Still unassessed 56

Catch only 141

Potential assessment leads: 20 people
Stocks that can be assessed: 107
Assessment rate in current processes: 1 pyr^{-1}

Ave
107

Ass   ts:

(107 * 0.5 yr^{-1}) / 20 p = **2.7 assessments per person each year**

So we don't assess new species very often. Instead the Councils set ACL's for unassessed stocks based on recent catch history

NOAA FISHERIES

Balancing the three T's

Current SEDAR process

- SEFSC identifies # of slots available for each council

- Councils prioritize annual needs (with SSC input…)
  - Complex mixture of science, management and economic drivers
  - Unassessed stocks often are a low priority
  - Pressure to reassess stocks if a better outcome is expected

- SEDAR Steering Committee fills "slots" based on consensus of members (1 SEFSC, 1 SERO, 1 HMS, 8 Council/Comm reps)
  - Not all "slots" are alike (workload not the same for all stocks)
  - Generally strive to base the assessment on the best scientific information available: little discussion of the minimum acceptable level of assessment

Is there a better way?

How thorough does each stock's assessment need to be to achieve the MSRA goal?

Caribbean Queen triggerfish
Annual value of commercial fishery (2011/2012): $310,000
approximate cost to assess in 2012/2013: $200,000

How frequently must it be updated?

A typical plea from scientists: "The Bluefin Species Group reiterates that a three to four year period between assessments would be more appropriate because bluefin tuna is a long-lived species and it takes several years to detect changes in bluefin biomass in response to changes in exploitation or management. A longer period would also allow scientists more time for inter-sessional work focusing … on research activities and improving models."

Managers response: Conduct assessments every two years with back to back assessments in 2014 (update) and 2015 (benchmark)

Changing priorities

Proposed National approach
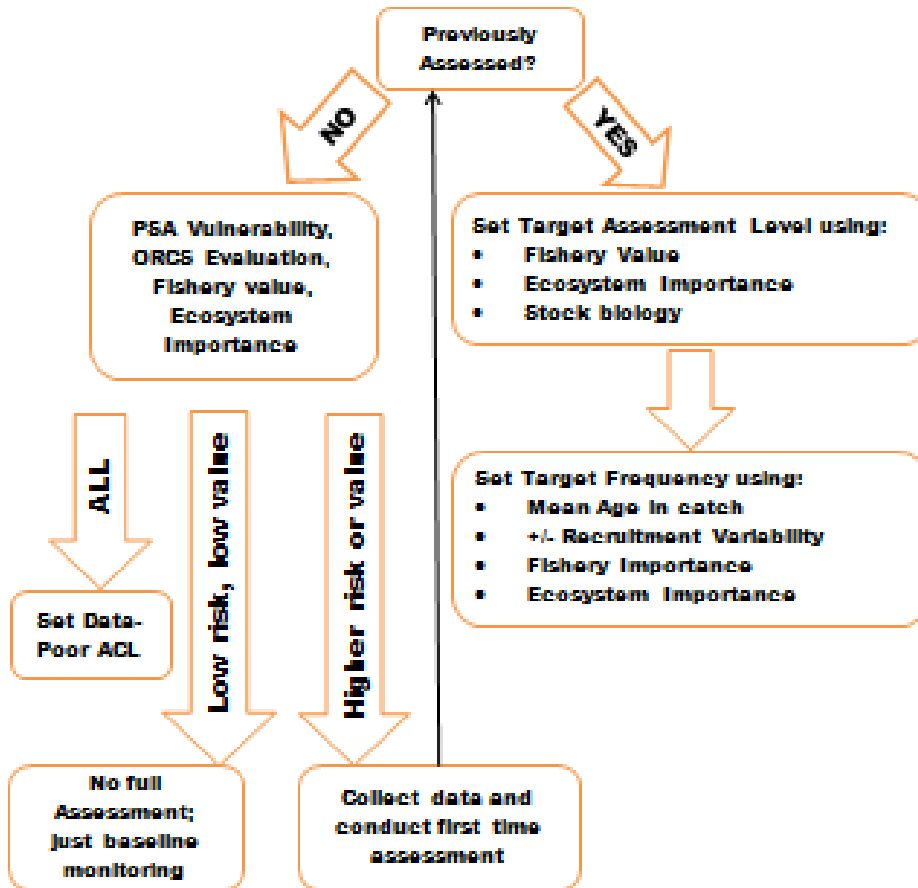
Major factors influencing setting of assessment targets and priorities:

1. **Fishery importance** (commercial and recreational value + other considerations)

2. **Ecosystem importance** (role of the stock in the ecosystem and strenth of its interactions with other species)

3. **Stock status** (relative to overfishing reference points)

4. **Stock biology** (how much change is expected per year, on average)

5. **History of assessment**, including availability of new information to resolve outstanding issues or indicate an change in stock status

Reducing bottlenecks

- Quality, accessibility and timeliness of data
  - limited by number of staff
  - non-standard reporting by multiple partners
  - late reporting by multiple partners
- Number and experience of assessment leads
  - limited by number of staff
  - high turnover
  - lack of redundancy (no back up)

Reducing bottlenecks

- Quality and timeliness of data
- Number and experience of assessment leads
- Documentation and presentations

Red snapper trail of documents (96 individual papers)

Courtesy Kenny Rose

.

NOAA FISHERIES

Reducing bottlenecks

- Quality and timeliness of data

- Number and experience of assessment leads

- Documentation and presentations

- Complexity of models (higher skill level needed, more time consuming)
  - Increasingly data hungry (new information to process)
  - Tendency to favor benchmarks

Do all assessments
need to be complex?

Reducing bottlenecks

- Quality and timeliness of data

- Number and experience of assessment leads

- Documentation and presentations

- Complexity of models

- Competing activities (time and distraction)

  - Interdisciplinary Plan Teams (21 in FY13)

  - Amendment Reviews (22 in FY13)

  - Endangered species (biop reviews, evaluation teams)

  - Oil spills etc…

  - Committees / Working groups

  - Internal reviews (Information Quality Act)

  - External reviews (MARFIN, Saltonstall-Kennedy, CRP, Internal RFPs, Journals, …)

  - Other Action items (correspondence sent to the Center Directorate requiring a response)

Reducing bottlenecks

- Quality and timeliness of data
- Number and experience of assessment leads
- Documentation and presentations
- Complexity of models
- Competing activities
- Red tape
  - Hiring
  - Travel / training
  - Institutional arrangements
    (especially moving money)
  - Information technology

National Science Foundation
WHERE DISCOVERIES BEGIN

ALL IMAGES

Press Release 14-060
EXCESSIVE REGULATIONS TURNING SCIENTISTS INTO BUREAUCRATS
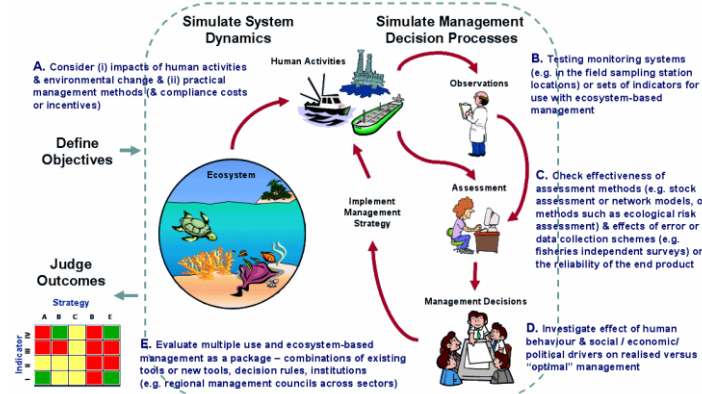
NOAA FISHERIES

Improving data inputs

Process data and conduct analyses faster

- Electronic reporting and automated quality assurance / control
- Standardize protocols for data reporting and preprocessing
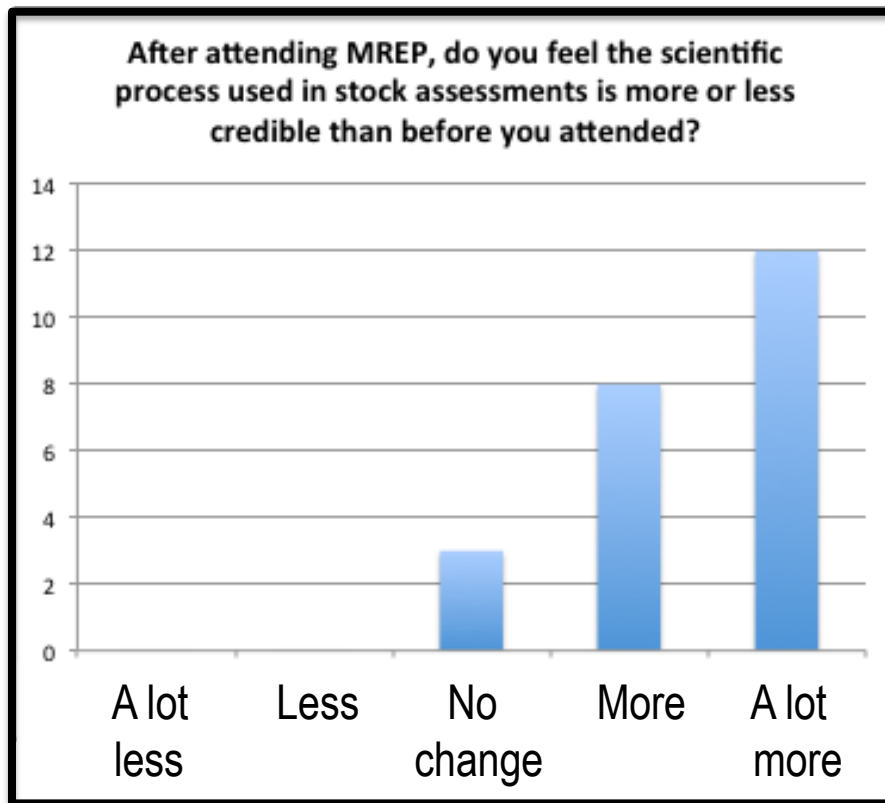- Integrated data base with automated access (via ORACLE)

Collect less data with more meaning

- How much do existing data contribute to assessments? Cost versus benefits?
- Collect new data (perhaps taking advantage of advanced technologies)

Investing in people

Communicating with constituents

(and building trust)

After attending MREP, do you feel the scientific process used in stock assessments is more or less credible than before you attended?

"I came to the [MREP] workshop with opinions and no real facts about stock assessments. I leave with a lot more information and a much more positive attitude towards the process."

NOAA FISHERIES
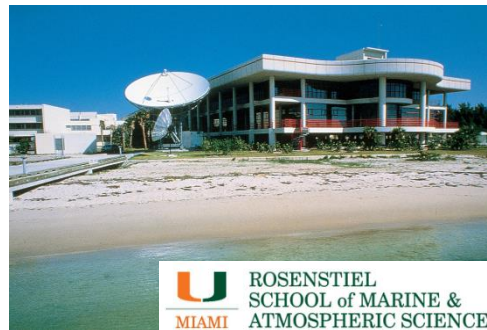
Investing in people

Developing the next generation of fisheries professionals

NRC (2000) proposed several actions to boost recruitment and retention of NMFS employees:

- cooperative arrangements with universities;

- enhancing continuing education opportunities for NMFS employees;

- increasing recruitment of individuals from related fields;

SEFSC / U.F.
Recruitment, Training and Research

U.M./CIMAS
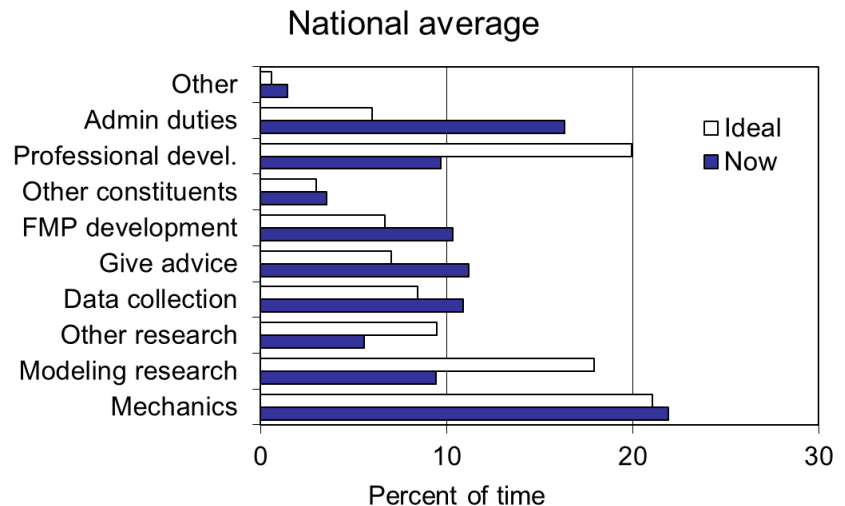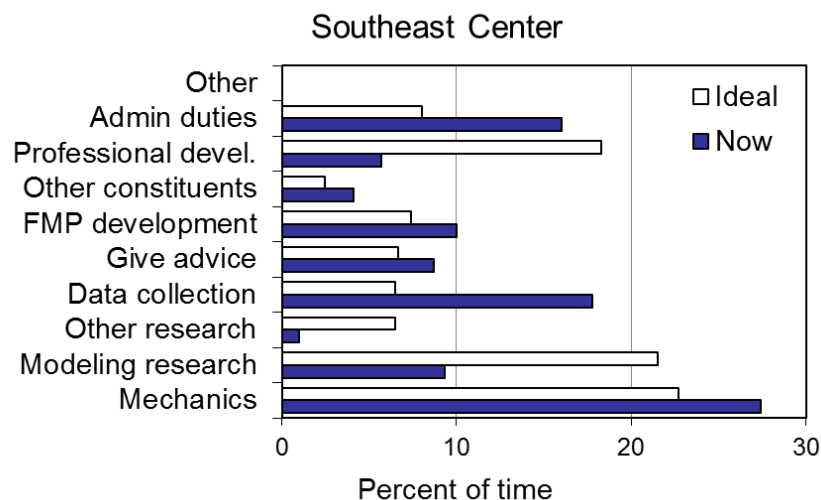Fisheries graduate program

U.S.F
Population dynamics ecosystem program

Investing in people

Professional development of staff

- Time and Motion Analysis (NMFS Stock Assessment Improvement Plan, p. 43)

% staff time	Southeast		National average	
Topic	**Actual**	**Ideal**	**Actual**	**Ideal**
Professional development	6	18	10	20
Research	10	28	15	27
Mechanics and administ.	43	31	38	27

Investing in people

Professional development of staff

- Research time

- Training
  - In house
  - External
  - QUEST Virtual Institute

- Conferences (e.g. WCSAM, AFS)
  - Dramatically diminished

- Fostering collaborations

NOAA FISHERIES Webinar Series
Sponsored by the Quantitative Ecology and Socioeconomics Training (QUEST) Program

Webinar Details:
Date: Wednesday, May 14, 2014
Time: 1:30 PM - 3:30 PM EDT
Space is limited. Reserve your seat at:
https://www1.gotomeeting.com/regist...
Topic: What Can Ecosystem Models Add to Stock Assessment Process?
Presenter: Dr. Cameron Ainsworth, *Assistant Professor, College of Marine Science, University of South Florida*

ICES CIEM

ICES Training programme

The International Council for the Exploration of instructors. Visit the ICES Training web-page: ww

This course is held in collaboration with the Int (ICCAT, www.iccat.int) and the Secretariat

Management Strategy Evaluation
- including Fisheries Library in R (FLR)

The World Conference on Stock Assessment Methods for Sustainable Fisheries

Boston, USA 15 - 19th July 2013

Questions?
Opinions?